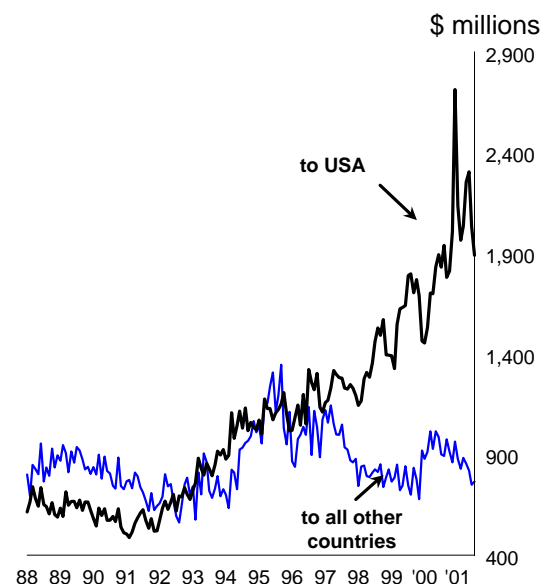

Exports ♦ July 2001

- The year-to-date value of total BC exports in 2001 is almost 10% higher compared to the January to July period in 2000, but the unprecedented growth experienced earlier in the year on the strength of phenomenal growth in the value of energy exports has waned. It is likely that international trade will slow further over the remainder of 2001 in light of the horrific terrorist attacks in New York and Washington. Increased delays at the border and shifting priorities will likely affect trade between BC and the US.
- Falling prices for electricity in recent months have affected the value of exports, but the year-to-date value of electricity exports is still 185% higher than the amount recorded in the January to July period in 2000. Similarly, natural gas exports are up 189%. Price inflation has been the main reason for the substantial growth in this sector.
- Overall export growth has been tempered somewhat by a slowdown in the forest sector. Year-to-date exports of both solid wood (-6.2%) and pulp and paper products (-14.7%) are significantly lower compared to the first seven months of 2000. Exports of these products to Japan and the European Union are down significantly in 2001. The recent imposition of a 19.3% duty by the US Department of Commerce on Canadian softwood lumber will likely cause further erosion of solid wood exports.
- Machinery and equipment exports are down 3% year-to-date compared to the same period in 2000. The decline is due to an almost 25% drop in the value of exports of motor vehicles and parts.
- While the value of exports to the Americas has increased substantially year-to-date compared to the same period last year, for the most part, exports to the rest of the world are down, with only a few exceptions. Trade with the European Union is down almost 5% and trade with the Pacific Rim (including Japan) has dropped 18%. On the positive side, trade with the US is up 22%, Mexico is up 64% and South America is up 81%.

British Columbia monthly exports
to July 2001



International Trade in High Technology Goods and Services

At the dawn of the 21st century, “high technology” has become a buzz phrase of which everyone is aware and about which everyone seems to be concerned. Governments are eager to attract high technology firms and fear falling behind in a new technologically driven world. This emphasis on high technology has necessitated the development of measures to monitor the growth and evolution of the high technology sector. An important aspect of this sector is international trade, as reflected in the high volume of two-way trade.

The domestic market for high technology goods does not have sufficient volume to achieve the economies of scale needed to remain competitive. Therefore, access to international markets is extremely important as it allows BC producers of high technology goods to focus on market niches.

At the same time, BC manufacturers do not produce enough of some types of high technology equipment to satisfy the domestic demand and as a result, large volumes of goods are imported into the province. It is interesting to note that a major consumer of high technology imports is the high technology sector itself.

High technology goods referred to in this article are based on a list developed by the U.S. Bureau of the Census and modified by Statistics Canada to fit Canadian conditions. For more information, please see the 2001 edition of *Profile of the British Columbia High Technology Sector*.¹

Exports of high technology goods continue to grow

Exports of high technology commodities from British Columbia were valued at \$946.8 million in 2000, up 15.7% from 1999. Exports of goods in the high technology sector outpaced growth of exports overall (+13.2%). Almost three percent of all BC goods exports were comprised of high technology goods.

The strong growth was due largely to two burgeoning commodity groups,² material design goods and opto-electronics, which leapfrogged over aerospace and computer integrated manufacturing to become, respectively, the second and third largest high technology commodity exporters in British Columbia. Computers and telecommunications equipment retained its rank at the top despite posting a decline for the second straight year. This group has slipped from having a 39% share of BC high technology exports in 1998 to only 22% in 2000.

International trade helps high technology in BC prosper as it provides a larger market that allows for economies of scale.

Exports of high tech commodities have been climbing for four straight years.

¹ The entire publication from which this article is adapted can be found on the web at:

www.bcstats.gov.bc.ca/data/bus_stat/hi_tech/HighTechProfile2001.pdf

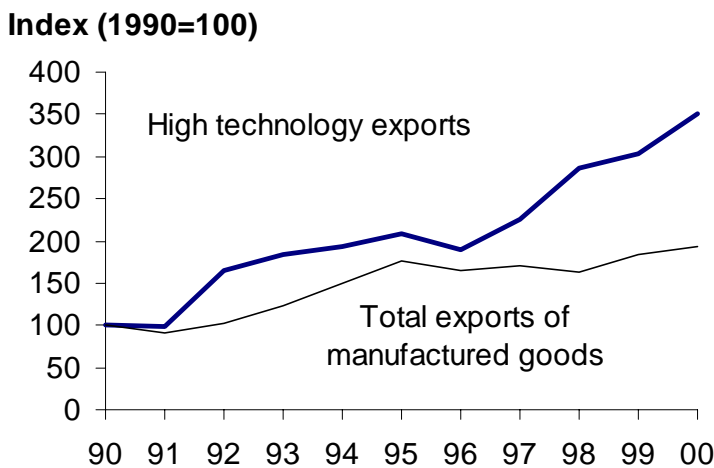
² For information on high technology commodity groups, see Appendix B of: *Profile of the British Columbia High Technology Sector, 2001 Edition*, BC Stats and BC Information, Science and Technology Agency.

BC high technology exports by commodity group—2000

	\$ million	% change
Computers and Telecommunications	212.2	-8.0
Material Design	178.6	90.0
Opto-Electronics	166.3	82.6
Computer Integrated Manufacturing	127.2	9.1
Aerospace	110.2	-14.6
Life Sciences	79.5	7.6
Electronics	65.2	-16.2
Weapons and Nuclear	6.6	149.9
Biotechnology	1.0	-57.5
Total	946.8	15.7

Over the last decade the pace of growth in high technology exports has appreciably exceeded that of exports of manufactured goods in total. Between 1991 and 2000, exports of high technology commodities have grown at an annual average rate³ of 15.1%, well above that of total manufactured commodities (+8.7%). This high rate of growth has resulted in a 350% expansion in the value of high technology exports from BC from 1990 to 2000.

High technology goods exports have grown faster than total goods exports

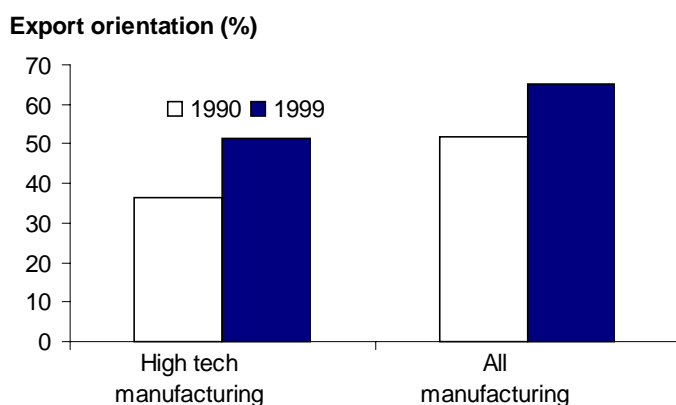


³ Compound rate.

Despite the greater rate of growth in exports of high technology goods compared to all manufactured commodities, a relatively smaller portion of their total shipments are exported. Approximately 66% of all processed goods in BC were exported in 2000, compared to only 54% of high technology goods. However, the greater pace of growth of high tech exports means the gap is closing. While the percentage of all goods produced that are exported has increased substantially since 1990 (a 14 percentage point jump overall), the proportion of high technology goods that is slated for export has climbed even more (a 17 percentage point rise).

Manufacturers of high tech commodities export less of their outputs compared to other BC manufacturers.

A smaller portion of high technology products are exported compared to total manufacturing



United States is the destination of most BC high tech exports

The United States receives by far the largest share of BC exports of high technology goods, significantly higher than its share of total BC exports. In 2000, BC manufacturers of high technology commodities exported \$797.7 million of their products to the United States, accounting for 84% of the total value of high technology exports. By comparison, the share of total exports of goods manufactured in BC shipped to the United States was 66%. After the US, the next most important destination for BC produced high technology commodities was Japan, with only 3% of the total value (\$28.9 million).

In 2000, BC exported more than 27 times the value of high technology goods to the US than to Japan, the next most important destination for BC high technology exports.

The US led the way in export growth in 2000, with an additional \$116.4 million worth of high technology goods heading south compared to 1999, which translates to a growth rate of 17.1%. The continued depreciation of Canada's dollar relative to US currency is one factor that makes BC's products attractive to American customers. Another reason for the strong growth in high technology exports to the US is the robust economic climate in that country. The US is just coming out of the longest run of peacetime economic expansion in history.

BC high technology exports by destination—2000

	\$ million	% change
USA	797.7	17.1
Pacific Rim	63.7	-9.5
European Union	54.8	46.1
Rest of the world	30.6	5.7
Total	946.8	15.7

Japan rebounded as an export destination for BC products in 2000, with the value of exports to that country almost quadrupling over the 1999 figure. Despite the tremendous growth in exports to that country, exports to the Pacific Rim as a whole fell for the third straight year, dropping 9.5% to \$63.7 million. Exports to Hong Kong and the People's Republic of China were halved, while exports to Taiwan were only a quarter of the value compared to 1999. By contrast total BC exports to both China (+24.6%) and Taiwan (+12.7%) grew substantially in 2000.

High technology exports to the European Union from BC rose 46.1% in 2000 on the strength of an extraordinary tenfold increase in exports to Italy, from \$2.1 million in 1999 to \$21.5 million in 2000. As a result, Italy surpassed the United Kingdom as the most important destination in the European Union for exports of BC high technology commodities. A large portion of this increase is due to a one-time contract with an Italian firm for helicopter engines, for helicopters that were being built for the Federal government of Canada. This could mean that exports in 2001 will be much lower. However, a memorandum of understanding signed recently between Canada and Italy designed to increase trade and investment between the two countries, including sectors such as Information Technology and health, may help maintain the higher export numbers.

High tech exports to Italy were substantially higher in 2000 compared to earlier years.

Mode of transport

By far the majority of BC high technology exports are transported by either land or air, with only a minor percentage (3.4%) shipped by sea. The destination of the exports is a significant determinant of the mode of transport. Since the United States is the destination for the bulk of high tech exports and air transport is more expensive on average, land (i.e., rail or truck) is the most popular mode of transport (55.1%). Almost two-thirds of exports to the US travel by land, and almost all the remainder are shipped by air.

The destination of exports generally determines the mode of transport, which is why, with the United States as the most popular destination, most high tech goods exported from BC travel by land.

**BC high technology exports
by region and mode of transport—2000**

Region	Mode of transport	\$ millions	% of total high tech exports
United States	Land	516.8	54.6%
	Sea	1.6	0.2%
	Air	279.3	29.5%
	<i>Total</i>	<i>797.7</i>	<i>84.3%</i>
All other countries	Land	4.9	0.5%
	Sea	30.9	3.3%
	Air	113.3	12.0%
	<i>Total</i>	<i>149.1</i>	<i>15.7%</i>
Total	Land	521.7	55.1%
	Sea	32.5	3.4%
	Air	392.6	41.5%
	<i>Total</i>	<i>946.8</i>	<i>100.0%</i>

For all other countries excluding the US, air cargo is the most frequent mode of transport, accounting for nearly 76% of the total exports. Another 21% are shipped by sea, and 3% by land.⁴

High technology imports are also on the rise

In 2000, imports of high technology commodities to BC grew at almost the same rate as exports from BC (+15.9%). There were \$3.5 billion dollars worth of high tech goods imported into BC in 2000, over three and a half times the value of that exported from the province.

⁴ The apparently implausible shipments of products by land to overseas destinations is explained by the fact that the goods may leave BC by either truck or rail to points of departure in the United States where they are loaded onto ships or planes for the remainder of their journey.

As with exports, computer and telecommunication goods lead the way as the most important import, but whereas exports of these commodities fell by 8.0% in 2000, imports were 35.7% higher than in 1999 eclipsing a billion dollars for the first time in 5 years. Aerospace ranked second in imports at \$0.8 billion and together with computer and telecommunication commodities, these two groups comprise over half of all high technology imports into BC.

BC high technology imports by commodity group—2000

	\$ million	% change
Computers and Telecommunications	1,100.6	35.7
Aerospace	807.8	3.1
Life Sciences	690.9	0.1
Computer Integrated Manufacturing	450.1	11.6
Electronics	204.8	33.2
Material Design	109.6	68.0
Opto-Electronics	64.3	64.3
Weapons and Nuclear	58.7	3.3
Biotechnology	52.7	2.6
Total	3,539.4	15.9

The United States is the source of the majority (56.9%) of BC imports of high tech goods valued at over \$2 billion in 2000. The next most significant origin of BC imports is the United Kingdom at a quarter of a billion dollars, or one eighth of that of the US. Nevertheless, the distribution of imports is much more diverse than that of exports where the US is far and away the single most important destination.

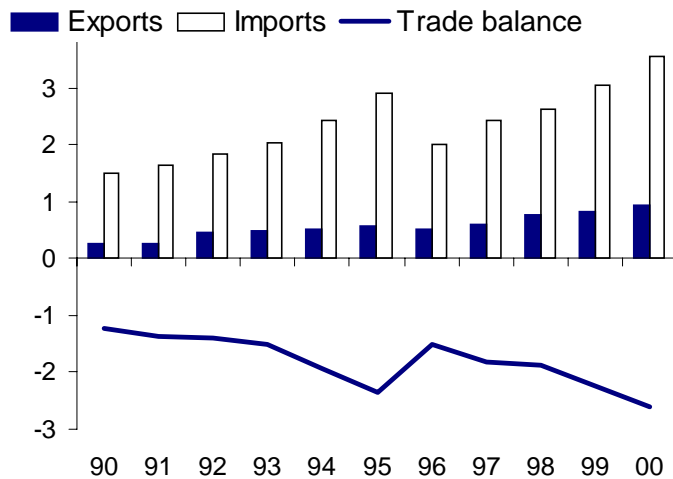
The balance of trade

BC's imports of high technology commodities are far greater than the value of exports, and as a result, the province runs a trade deficit in these goods. Although high tech exports have grown at a faster rate than imports over the last decade, the absolute growth in imports has exceeded that of exports, which means the trade imbalance has continued to expand.

BC has a trade deficit in high technology goods as imports far exceed exports.

High technology trade deficit continues to grow

Value (\$ billions)



In 2000, the trade deficit in high technology commodities grew to about \$2.6 billion, an increase of almost 16% over 1999. Roughly half of BC's trade deficit in high technology commodities is with the US (\$1.2 billion). The trade deficit with Pacific Rim countries grew over 41% in 2000 to \$415.5 million accounting for about a third of the total increase. Although BC's trade deficit with the European Union grew more slowly (+2%), it is still significantly larger at \$628.2 million.

BC's trade deficit in high technology commodities with the United States is more than that of the European Union and Pacific Rim countries combined.

The only high tech commodity groups for which BC has a trade surplus are opto-electronics and material design. These categories include some of the most technologically advanced goods, such as lasers, fibre-optics, superconductors, and advanced polymers. That BC exports more of these leading-edge commodities than it imports supports the contention that BC's research and development activities are a vital part of the manufacturing activities in the province.

BC balance of trade in high technology goods by commodity group—2000

	\$ millions
Opto-Electronics	102.0
Material Design	69.0
Biotechnology	-51.7
Weapons and Nuclear	-52.1
Electronics	-139.6
Computer Integrated Manufacturing	-322.9
Life Sciences	-611.4
Aerospace	-697.6
Computers and Telecommunications	-888.4
Total	-2,592.6

Export of high technology services

Service exports are generally more difficult to measure compared to exports of goods. Some service exports take place when BC-based professionals, such as engineers or software programmers work for a period of time outside the province. Service exports also occur when, for example, an engineering firm produces a study in its BC office for an overseas client or when a software developer creates a new program which is "shipped" on-line to a client in another country.

Over the last couple of decades, worldwide trade in services has increased significantly as technical innovations have widened the scope of the service sector and advances in transportation and communications have decreased the distance between countries in an economic sense. The proliferation of e-mail, the Internet, and other forms of information technology has made it easier to conduct business with clients from around the world. Moreover, decreases in the cost of travel, and an increased number of overseas offices have made it more economical—and practical—for companies to send employees overseas to conduct business.

Service exports continue to grow

Although there are four broad groups of service industries in the high technology sector, only two of them derive a significant part of their revenues from exports. In 1998,⁵ exports of services from computer and related services and engineering services amounted to \$638 million, approximately 83% of the value of all high technology goods exports. This is compared to 1991⁶ when services exports were about one third the value of goods exports.

BC's high tech service industries continue to increase their share of high tech exports.

BC high technology service exports—1998

	Revenues	Exports	
	\$ million	\$ million	% change
Computer services	1,820	456	92.4
Engineering services	1,202	182	-51.5
Total	3,022	638	4.3

In 1998, the engineering services industries reversed the large gains of a year earlier when exports more than doubled, such that they were almost back at their 1996 levels. However, the growth in exports of computer services more than offset this decline, almost doubling from a year earlier to \$456 million. As a result, total service exports posted a moderate increase of 4.3% overall.

⁵ 1998 is the most recent year for which services export data is available.

⁶ The first year for which services export data is available.

**Recent Feature Articles In British Columbia Origin Exports Release
Listed By Statistical Reference Date of Issue**

01-06	<i>Interprovincial and International Trade in Goods and Services (released August 2001)</i>	00-01	<i>B.C. Goods Export Growth Among Lowest In Canada During 1990s (released Mar 00)</i>
01-05	<i>Buy Low, Sell High: Trade in Electricity (released July 2001)</i>	99-12	<i>British Columbia Trade Becoming More Continental Than Global (released Feb 00)</i>
01-04	<i>Attack of the Canadian Tomatoes (released June 2001)</i>	99-11	<i>Growing Cross Border Trade In Agricultural Food Products (released Jan 00)</i>
01-03	<i>The Softwood Lumber Dispute (released May 2001)</i>	99-10	<i>Trade Imbalances Growing Within NAFTA (released Dec 99)</i>
01-02	<i>(no article)</i>	99-09	<i>B.C. Exports Recovering In Some Asian Markets, Still Declining In Others (released Nov 99)</i>
01-01	<i>(no article)</i>	99-08	<i>British Columbia Exports to United States Move Increasingly By Truck (released Oct 99)</i>
00-12	<i>(no article)</i>	99-07	<i>Export Changes During 1990s Reduce Resource Dependency (released Sep 99)</i>
00-11	<i>After Much Economic Diversification, B.C. Exports Are Still Mainly Resource Based (released Jan. 00)</i>	99-06	<i>British Columbia Losing Dominant Position In World Lumber Markets (released Sep 99)</i>
00-10	<i>Ambitious Western Hemisphere Trade Agreement Could Help Shape Canadian Trade In the New Decade (released Dec. 00)</i>	99-05	<i>September Team Canada Mission To Visit Japan and Australia (released Jul 99)</i>
00-09	<i>Trade Growth Tied To Transportation Infrastructure (released Dec. 00)</i>	99-04	<i>New Export Industries Depend Heavily On Air Freight Services (released Jul 99)</i>
00-08	<i>Some Familiar Patterns Developing In Trade Between China and British Columbia (released Nov. 00)</i>	99-03	<i>United States Log Exports (released May 99)</i>
00-07	<i>International Trade In Services Produces B.C.'s Only Trade Surplus (released Oct. 00)</i>	99-02	<i>British Columbia Losing Ground In United States Lumber Market (released Apr 99)</i>
00-06	<i>Value Added Wood Exports Grow Fast In B.C., But Faster In Rest of Canada (released Aug. 00)</i>	99-01	<i>British Columbia Export Reliance On U.S. Market Highest Since Early 1960s (released Mar 99)</i>
00-05	<i>What Has Free Trade Meant For B.C.'s International Trade? (released July 00)</i>	98-12	<i>(no article)</i>
00-04	<i>British Columbia Shipping Smaller Portion of Canadian Forestry Products (released June 00)</i>	98-11	<i>Diversification of Export Mix Accelerates In 1998 (released Jan 99)</i>
00-03	<i>1990s Brought New Markets and New Products For B.C. Exports (released June 00)</i>	98-10	<i>Offsetting Export Losses In Asia With Gains In the United States Market (released Dec 98)</i>
00-02	<i>United States Continues Substantial Log Exports In 1999 (released April 00)</i>		

NOTES

Countries Included Within World Regions:

(1) Western Europe: United Kingdom, Ireland, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland.

(2) Eastern Europe: other Europe, including all of Russia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, etc.

(3) South East Asia: Malaysia, Brunei Darussalam, Singapore, Myanmar, Kampuchea, Laos, Indonesia, Philippines, Thailand, Vietnam.

(4) Africa: continental Africa, excluding Ethiopia, Libya, Somalia, Sudan, Egypt.

(5) South America: continental South America from Colombia and Venezuela south to Chile and Argentina, including offshore islands, but not Caribbean.

(6) Central America and Caribbean: from Guatemala and Belize to Panama, plus Caribbean Islands.

(7) Pacific Rim (including Japan): Japan, Hong Kong, Malaysia, Brunei Darussalam, Singapore, Laos, Mongolia, China, Indonesia, North Korea, South Korea, Philippines, Macau, Taiwan, Thailand, Vietnam, Australia, Fiji, New Zealand.

(8) Pacific Rim: as above, but excluding Japan.

(9) Middle East: from Turkey and Iran south through the Arabian Peninsula. Excluding Afghanistan and Pakistan, but including Cyprus, Ethiopia, Egypt, Somalia, Sudan and Libya.

'Selected Value-added Wood Products' category includes prefabricated houses, doors, windows, furniture, moulding, siding, etc. It does not include panel products, shakes, shingles or any pulp and paper products.

Service Offered for Detailed Trade Statistics

For B.C. government statistics users requiring more detailed information on exports or imports, a special report service is offered through the address below:

Dan Schrier - Trade Statistics

BC STATS

553 Superior Street, Victoria, B.C. V8V 1X4

(250) 387-0376

This service is provided through the Trade Research and Inquiry Package (TRIP) computer reporting system. TRIP offers user-defined tabulations of export or import statistics for British Columbia, Canada, the United States and other countries. Tabulations can include information on commodities, countries, U.S. states, years, months, mode of transport, etc.